

# Z88 EPROM

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## Club Addresses

All articles for **Z88 EPROM** and any membership matters (**except** Software Library) should be sent to:

**Z88 USERS' CLUB  
68 WELLINGTON STREET  
LONG EATON  
NOTTINGHAM  
NG10 4NG**

All requests for software from the Club Software Library, (**but not** special offers), items for inclusion in the Library, and EPROMs for erasure should be sent to:

**THE SOFTWARE LIBRARY  
Z88 USERS' CLUB  
3/8 JENNER ROAD  
GUILDFORD  
SURREY  
GU1 3PL**

Please note that the **Library** address is the one to use when sending for a list of Library programs - this list is **not** available from the main Club address. Be sure to enclose 50p for the list.

The Club **CLI** Library is run by:

**MICHAEL HEY  
18 WOODSIDE ROAD  
SANDIACRE  
NOTTINGHAM  
NG10 5GP**

Any **CLI**'s for the Library, requests for **CLI**'s and the list of **CLI** programs should be sent to Michael Hey.

ALWAYS include your Membership Number with any correspondence. This is not just to be awkward - now the Club is large it can be very time-consuming searching the database for a member's number. Your number is printed on the address label of each issue of **Z88 EPROM**. Please be sure to enclose a stamped-addressed envelope with anything needing a reply.

## Editorial

And here we are again - only May, but already like Summer. The All Formats Computer Fair has been and gone, and I must say that it was marvellous to meet so many of you at the show. Many people introduced themselves for the first time, while others were old acquaintances renewed. Ian Braby did a roaring trade with requests for Library Software, keeping him well occupied for both days. Michael Hey, who keeps the CLI Library, was similarly busy, and on two occasions offered a 'while-you-wait' programming service in response to requests for help! The show was extremely busy on the Saturday, but much less so on Sunday. Overall, however, most people I spoke to thought the Show had been successful. We'll all be there next time, which is over the weekend of 9/10 June. I hope to see you there!

Those who came to our first (and so far, only) Club Workshop a little over a year ago will probably be interested to know that I am thinking of organising another one, later this year. The format will be slightly different, in that I don't intend to give as much time to formal presentations, but allow more time for informal troubleshooting groups. At the moment details are undecided - it is likely to be on a Saturday in September or October, and the venue will either be Nottingham/Long Eaton or Aylesbury or Northampton! The cost will be low (ie. less than a Fiver) but no food will be included this time. The idea of this collection of possibles is to gauge interest - because I must have more people than came last time. If you are remotely interested, please write and let me know. On the basis of the number of interested parties I will then set a date and put proper details in a future issue.

More news from America: The details I shall not repeat, as they are fully described in Newslines, but the announcement of yet more new RAM expansions, including for the first time ever internal expansions, has got to be brilliant news. At a time when the machine ought really to be in decline (it is, after all three years old now, positively an old-aged micro), out pop new products from across the Atlantic, not even the Z88's home territory! This side of the pond, the inertia shows no real signs of slowing - Z88 sales are bouyant, and new products still crop up.

The only thing I fear is that this seemingly ever-bouyant market is leading CCL into complacency. When was the last time you saw CCL exhibiting at an exhibition? When was the last time you saw an advertisement for the Z88?

At the All Formats Fair many Z88 users who visited our stand expressed disappointment that CCL were not there, even to answer technical questions. It was a sad reflection on CCL that these people were only disappointed, and not suprised at CCL's absence. Many people made noises to the effect of "what do you expect, customer support?" Others thought that CCL were no longer around, and the Z88 no longer produced!

So much potential untapped.....

## Newslines

**RANGER COMPUTERS** of Northampton, the Z88 Corporate distributor, have announced two new Z88 accessories: An analogue to digital converter box, and a ruggedised case for the Z88, allowing its use in hostile environments.

ADAM (or Analogue Data Acquisition Module) is an analogue to digital converter module for the Z88. It provides eight analogue input channels with a +/- 2v range and a resolution of 100uv. The module is housed in a compact external box and communicates with the Z88 via the standard RS232 connector. Power is supplied externally, or from a modified version of the Z88 which Ranger can supply. ADAM can provide data at up to 12 conversions per second and has an overall accuracy of better than 1%.

ADAM is available from Ranger at a price of £250.00, with delivery taking 4-6 weeks.

The second new Z88 accessory from Ranger is the Z88 Hardcase. Developed by the New Zealand Ministry of Agriculture for recording fish catches at sea, the Hardcase allows a standard Z88 to be used in extreme environmental conditions. it is fully sealed and impervious to rain, salt spray and humidity, while also providing the Z88 with substantial physical protection. The housing provides space below the Z88 for the Rangerdisk IBM-PC compatible floppy disk drive, making the combination the only environmentally-protected floppy disk based portable available anywhere.

The Hardcase is available from Ranger at £495.00, excluding the Z88 and Rangerdisk. Delivery 4-6 weeks.

Ranger Computers may be contacted on 0604 791064, Fax 0604 791114, or by post at The Innovation Centre, Boughton Green Road, Moulton Park, Northampton. NN2 7AH.

**THE THIRD ALL FORMATS COMPUTER FAIR** is to be held over the weekend of 9/10th June. Following on from the success of the second Fair held in April, the June event promises even more in the way of computer bargains. As well as the presence of ZX and QL machines, the Fair has areas for PC, ST, Amiga, MSX and of course Z88 users. The Club will be there again, selling back numbers, binders and spares, along with other Z88 companies selling a wide variety of Z88 hardware and software.

Basically, whatever your taste in computing, the Fair has something to offer. Opening hours are 10-5 on Saturday 9th, 10-4 on Sunday 10th. Admission is £3, and the venue remains the New Horticultural Hall in Westminster.

**RAKEWELL** have announced yet more dates for Z88 Training Days. This is due to renewed interest in the days, and the previous courses being over-subscribed.

### **Steaming up the Z88 - Friday Evening 15th June**

A short informal gathering for non-computer people to get familiar with the basic functions of the Z88 and PipeDream. Course fee £19.00 + VAT (£21.85)

### **The Seventh Z88 Training Day - Saturday 16th June**

A whistle-stop tour on what the Z88 can be used for - covering the following areas and allowing you to try them out during the workshops:

Morning session : Setting up your Z88 \* Printer Driving \* The Filing System \* PipeDream Basics \* Advanced PipeDream.

Afternoon session : Diary \* Communicating with other Computers \* Z88 Survival Guide \* Workshops

Course fee £69.00 + VAT (£79.35) each includes buffet lunch and course notes.

### **The Fifth Z88 Follow-up Day - Saturday 30th June**

Primarily designed for people who have already attended the Training Day - with practical examples to work through.

Morning session : CLI \* Word-processing with PipeDream

Afternoon session : Spreadsheets with PipeDream

Course fee £69.00 + VAT (£79.35) each includes buffet lunch and course notes.

**The Z88 - Fact Finding session - Date to be announced.**

An informal gathering for Z88 users to work through their problems with the experts. If you wish to attend, send details of the problem that you want solved to Rakewell, we will then send details of time, date and cost - (this all depends on demand!)

The day courses start at 10am and will be held in Aston Clinton, nr. Aylesbury, Bucks. There are a number of hotels nearby, if you wish to stay a night.

For further information or bookings, contact Vic Gerhardi on 0296 630617, fax 0908 371751, or by post at Denbigh House, Denbigh Road, Bletchley, Milton Keynes. MK1 1YP.

**SHARP'S OF MECHANICSVILLE** have confirmed that the 1M RAM cards are now available. They have also released a 256k RAM card, available for £139.00 + £3.00 shipping. Finally, Sharp's have announced a range of internal RAM upgrades for the Z88, in sizes of 128k, 256k and 512k, so that none of the Z88's slots are taken up. The 128k internal RAM takes 50 times less current draw than the usual 32k RAM. Prices are £109.00 for 128k, £219.00 for 256k and £299.00 for 512k. These prices do not include shipping the Z88 back to the customer. Sharp's are at Box 326, Mechanicsville, VA 23111, USA. Tel (804) 730-9697. Fax (804) 746-1978

## Helpline

If you have a technical query, write to one of our Helpliners listed below. Please note that you should include a stamped addressed envelope or sufficient return postage for your reply.

**CLI Files** - Contact Michael Hey by post only at: 18 Woodside Road, Sandiacre, Nottingham. NG10 5GP

**Z88 to Amstrad PCW Link** - Please write in the first instance to: Mr A West, 16 Southway, Burgess Hill, Sussex. RH15 9ST.

**zBASE, CLI and all Wordmongers products except TX and Comms software** - Contact Jason Crook (ex of wordmongers) at 4 Salisbury Close, Princes Risborough, Bucks. HP17 0JF. Telephone 08444 7075. I will also write to order in zBASE.

**zBASE** - Help on commands and programming. I can accept info/programs on paper, EPROM, zTape cassettes or IBM disk. Contact Robin Jarvis, 27 Gloucester Road, Waterlooville, Hants. PO7 7BJ.

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**Z88 to Amstrad CPC Link** - Contact Duncan W. Kennedy at 32 Otterston Grove, Dalgety Bay, Fife. KY11 5PA.

**BASIC Programming** - Contact Richard Russell at 59 Campbell Road, Gravesend, Kent. DA11 0JZ.

**Interfacing Z88 to various hardware - Mac, BBC, PADs, also UNIX and C experience** - Contact J.P. Knight Email JANET on jpknight@uk.ac.lut.suna, or snail mail during term time to Room 66, Hazlerigg-Rutland Hall, Loughborough University of Technology, Ashby Road, Loughborough, Leics, LE11 3TZ.

**PipeDream/Diary/General** - Contact Keith Winsor at 13 Swansea Road, Reading, Berks. RG1 8EY. Or Telecom Gold 82:TLR1747.

**Z88-PCW Link** - Using C-Port program. Please contact David Prestage at 47 Knighton Road, Otford, Sevenoaks, Kent. TN14 5LD.

**Anything Educational** - Please contact Bob Shore, 8 Anchor Close, Hathern, Leics. LE12 5HP. Telephone 0509 842670.

**Z88 - Atari ST Links** - Please contact Ian Salmon, 18 Fillioll Close, E. Hanningfield, Essex. CM3 8UY.

Can anyone offer Helpline for printer set ups?

## Queries, hints and Tips

### R Mackay (0168)

It may be helpful to members to know that they can purchase an EPROM Eraser kit, that will erase your EPROM cards in 5 minutes or so and it will take up to five cards at one time.

The kit contains all parts except for a case, mains lead and a plug. A case can quite easily be made, but be sure that there is no escape of UV light. Also there is no switch off timer in the kit, but this can easily be done manually.

The kit can be obtained from the address below, and if you mention you are from the Z88 user group you will get the kit for £16.50 incl of p&p and VAT. A saving of £1.90 on the non-member price.

SERVICE TRADING CO,  
57 BRIDGMAN ROAD,  
CHISWICK,  
LONDON W4 5BB

**Joyce Waldegrave (3269)**

Can anyone tell me why my mains adapter failed completely after one year of use? I had left the Z88 plugged into the mains, with the mains switched on, but the Z88 switched off, overnight on occasion. Was this the cause?

**(Very unlikely that the above would cause failure. I suspect this was just due to a faulty unit. Do any other members have mains adaptor horror stories? - Roy)**

**Robin De Salvo (1122)**

I thought it might be of interest to members who daily utilise a briefcase whilst conducting their business that it is possible, if you live/pass exit 25 on M25, to have foam inserted inside your briefcase (I have two types of Samsonite) of the colour of your choice.

Martin Harrison-Kerr of Custom Cases Ltd, Custom House, Britannia Road, Waltham Cross, Herts. EN8 7RH. Telephone 01 882 2992 Or 0992 764545, Tlx 28866 Fax 0992 713508.

The above will by prior arrangement (not 1.00 to 2.00 pm) give you an estimate on the spot and within an hour have cut out inserts in foam so that you may carry your Z88 with accessories. Mine has been made to interchange with either Samsonite cases which are different sizes internally.

My case now holds the following:

Z88 plus Cambridge Topper, "Z88 Magic" book, new Z88 batteries, mains adaptor, and Z88 universal printer cable.

All of the above was carried out by Martin Harrison-Kerr within one hour of arrival (coffee free!) for £27.85 including VAT.

**Brinley Platts (2897)**

I wonder if you know of many portable modem users out there? I have found the facilities provided by the software/modem package superb for business communication via Telecom Gold but the modem itself (Data-tronics Discovery 1200P) is a pain.

Not only is it not BT approved, but I had intermittent failures on my first unit, which was eventually replaced by my dealer. Now the same thing has started to happen with the replacement. What on earth am I doing wrong?



(I don't recollect any other bad reports about this modem, but I would be very interested to hear anyone else's problems. Are you quite sure the problem does not stem from a faulty lead or something similar? - Roy)

## Members' Letters

Mike Haynes (2838) Waltham Cross

Dear Roy,

Harvester Information Systems Ltd

Following your request for information on the above company the following information is relevant.

As a Trading Standards Officer I have been able to ascertain that the above company is in financial difficulty and has, to all intents and purposes, ceased trading. I have spoken to the Trading Standards Department in Humberside who are responsible for the Company and they have agreed to try and help any Club members who are owed moneys by Harvester. Any such member should address their complaints to:

Mr T Allatt Trading Standards Department 1/3 Cliff Gardens Scunthorpe  
DN15 7PH

## EDUCATING THE Z88

by Jeff Moon (0191)

Although recognised as being an invaluable tool for schools as seen by the recent adoption by MacMillan City Technology College, little seems to have been written about the compatibility with other machines or to the uses to which the Z88 has been put.

As far as schools are concerned the Z88 needs to communicate with BBCs, Archimedes, PCs and Nimbus machines. What then of the software for these machines? The software for the Acorn family is fairly well documented but what about the others? Communicating with a PC is no bother at all and is taken care of by PC Link II. Communicating with the Nimbus and its network is a different matter. Very little has been written about this valuable link and yet the Nimbus must be the leader in secondary school computing.

# PipeDream

PipeDream is now available for the IBM PC and compatibles, and the Acorn Archimedes. It has been completely rewritten for these computers and contains many new facilities, whilst retaining complete file and keyboard compatibility with the Z88.

PipeDream on the PC or Archimedes makes the ideal companion for your Z88. With just a connecting lead and the PC LINK II EPROM you can load files directly from the Z88 filing system into PipeDream on the other computer and continue working with no loss of information. Now you can use PipeDream on the computer in your home or office as well as using it in the Z88.

New features of PipeDream on the PC and Archimedes include:

- ◆ up to 8192 columns and over 500,000,000 rows (depending upon your computer's memory size)
- ◆ mail-merge
- ◆ function keys
- ◆ complete keyboard reprogrammability
- ◆ foreign character editing and printing
- ◆ linking files
- ◆ financial functions
- ◆ database functions
- ◆ LOTUS file load and save
- ◆ user defined colour displays

PipeDream for the IBM PC and PipeDream for the Acorn Archimedes costs £99 + VAT.

For more information or to order PipeDream call us on 0954 211472 or write to us at Colton Software, Broadway House, 149-151 St Neots Road, Cambridge CB3 7QJ. Access and VISA telephone orders welcome.

PipeDream - power at your fingertips

# Wordmongers Ltd.

2 Silverdale Close, Penn, Bucks. HP10 8JP. Tel 049 481 3591

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All formats fair.

The April fair was certainly worth the effort. I managed to see lots of familiar faces and many new ones. I even sold enough software to make the enterprise a commercial success too. Thank you. With this kind of support the Z88 has a long and healthy future.

From the software angle, zBASE was the biggest seller. The power of this particular product is obviously not one of its great attractions. Potential users appear to need some form of reassurance before buying this product. So let me reassure you. zBASE really is a very flexible tool. At the same time, it can be used in a very straightforward fashion to do some of those tedious tasks for which Pipedream is not the correct vehicle. To encourage this view, I intend to publish a small menu program in a forthcoming edition (subject to Ed's permission) which will show how simple it can be.

THINKz, our outliner program is being worked on this very moment. For those new to the Z88, THINKz provides a thought jotter. As each idea is developed, its subordinate items can be attached in a nested form. It produces a layer cake of notes which can be printed or exported to Pipedream. Unfortunately, it was the first of our programs which came out with a bug involving file handling. Michael Hey's review, along with some detailed notes from Bruce Knox in Australia are Clive's current bed-time reading. You'll be the first to hear..

P.S. We are currently in discussion with Vic at Rakewell with a view to a training day geared to zBASE. If you are even vaguely interested, drop me or Vic a note.

Tony Kaye.

Product Enquiries: Please Call 030381 3883

# RANGER



## COMPUTERS LTD

### The Z88 Specialists

#### HARDWARE PRODUCTS

##### RangerDisk

IBM PC compatible disk drive for the Z88. Reads/writes 720K 3.5" disks in DOS 2.1 format, suitable for use as stand alone file storage for Z88 or as data transfer device in busy situations. Copies single or multiple files, truly data transparent. Supplied complete with Diskfiler application in EPROM for Z88, connecting cable and manual at £450.00. P & P £11.00 (Next Day).  
Optional mains adaptor £17.50.

##### Carrying Cases

Ranger provide a choice of genuine leather carrying cases for the Z88. The **executive case** provides room for papers and EPROM packs and is attractively styled. Why carry a briefcase when Z88 is all you need? Price £70.00. P & P £4.50.

The **Field case** is designed for outdoor and utility applications, and gives the Z88 substantial protection from the environment. Supplied complete with shoulder straps, the unique arrangement of the case allows Z88 to be used "hands free" while on the move. Price £70.00.  
P & P £4.50.

##### Battery Pack

Rechargeable external battery pack, connects to Z88 mains adaptor socket, gives correct voltages and 8-12 Hr continuous operation, recharges overnight. Supplied complete with UK mains charger at £37.50. P & P £3.50.

##### Z88

We keep the entire range of Z88 hardware and many supporting items in stock. Please enquire for details and prices.

## SOFTWARE PRODUCTS

- Vision-100** VT-100, 102 and 220 terminal emulator for Z88. Gives scrolling 24-line screen, file capture/transmit and full range of screen and keyboard emulation features. Faster than many standard terminals and suitable for use with VAX applications as well as many other systems. Supplied on EPROM pack at £175.00, complete with manual. P & P £3.50.
- CNC TX** File capture/transmit facility allows Z88 to transport data for CNC (Computer Numerically Controlled) machine tools. Allows user to imbed header, trailer and end of line strings to match his existing systems. Supplied on EPROM pack at £55.00. P & P £3.50.
- Zback** Add-in utility for PC Link II, allows automatic backup of entire Z88 files to PC. Supplied on 5.25" disk at £15.00. P & P £2.50.

## OTHER APPLICATIONS

Ranger specialise in the production of applications for the Z88, many of which are bespoke packages for individual clients. Examples are:

**Ranger Highway**, a Data capture software package for local authority highway survey, developed in collaboration with Gloucester County Council. The program allows entry of position and defect codes at rates up to 50K bytes per day and writes simultaneously to RAM memory and EPROM backup for security.

**LEXLINK** allows data transparent file transfer to PC's with the LEX word processor system. The program includes file format conversion for Pipedream to LEX and LEX to Pipedream and has been developed under contract to the UK Ministry of Defence for the Royal Marines.

Please note that all prices exclude VAT. We accept official orders from qualifying UK companies and government organisations. All others, cheque or P.O. with order please. Next day delivery available on all items, subject to stock, £11.00.

**Ranger Computers Ltd**  
The Innovation Centre  
Boughton Green Road  
Moulton Park  
Northampton NN2 7AH

**Telephone: (0604) 791064**  
**Fax: (0604) 791114**  
**Telex: 94017588 TBIC G**

Connecting the Z88 to the Nimbus is different to a normal PC. Although the Nimbus network stations will run many PC programs they are in themselves not true PCs. PC Link will not run for instance on a standard machine and Pipedream will only work if loaded from floppy. It may be that you need an extra RS232 board or IBM board but certainly the standard machine will not touch PC Link. However actual communication is not a problem. To the rescue are Lindis International who have a Nimbus link package available for about £12. For this you get the software which runs under BBC Basic on the Nimbus, a scant but nevertheless concise sheet of instructions and a connecting lead. This lead attaches to the Nimbus via its AUX port. However before communication can start using the Z88 Import/Export facility the Nimbus must be configured to have its AUX port set to O/P. Once in use pupils seem to have little bother transferring the files from one machine to another.

Pipedream and PC Link II will work quite happily on AX and VX machines.

Compatibility of material transferred is of course an obvious area where problems will be encountered. The commonest word processors on the Nimbus network will be Write and Word. Both these packages accept Pipedream files provided that they are plain text format. Unfortunately, Pipedream like its predecessors the View family for the BBC, all feature a carriage return at the end of each line. Write and Word for the Nimbus do not. They, like Wordwise for the BBC, use an internal code to indicate that a new line is called for. The existence of carriage returns need not be a problem if you have already formatted your text correctly in Pipedream. But if you wish to have the ability to reformat your text then it is essential that you remove the carriage returns before you attempt to load the file. Any simple program that can intercept a carriage return and translate it into a space will do. However it may mean that you will end up with double spaces and the loss of paragraphs. A simple program such as that in the first listing at the end of this article can be run on the Z88 to do this job for you. It has the advantage that if you have used a double carriage return to indicate a new paragraph then this will not be lost. It also checks for the pound sign and translates this.

Plain text files are also accepted by Excel, the multiple package running under Windows. The Tabs work in the same way forcing the entries into the appropriate column. However any formulae will be lost. This is not a problem in some ways as the syntax for Excel is different from Pipedream. What you can do however is to use the converters from PC Link II to change a Pipedream file into a Lotus file. Excel accepts Lotus files as they stand and does the necessary conversions on the formulae.

Excel can also save the files back out in dBase format or ASCII.

While on the subject of dBase. Data from the Z88 can be loaded into this program if the file has been created in comma format. (This can be achieved on the PC version of Pipedream but not from the Z88.) In other words starting from a plain text file if one converts the tabs to commas and then uses the Append From command in dBase the file will be added to an existing database structure. One problem here is that each record must have all the fields present, even if they are empty. One way round this problem is to use a data input routine which will produce the necessary structure. This is a relatively simple exercise and I suggest that a skeleton for such a program may be like the third listing. This has the advantage of not weighing pupils down with lengthy procedures where the main object of the exercise may become second to the actual conversion problem.

What files are they transferring? Well don't get wildly excited by what is going on. I introduced this article by saying the Z88 is a resource tool. It is not a magical device but comes under the same heading as notepad and calculator. Experience here has put the Z88 to quite a few mundane uses. Each however has, we hope, been one which would bring over the point of information transfer; real IT at work. A recent project may serve as a suitable example. During this piece of work pupils were asked to consider the problems of ozone depletion and the possible link with CFCs. Their starting point was the BBC where they extracted some information from a program called Healthdata. This was transferred to the Z88. Next along to the library where books were searched; the Z88 acting as a jotter. Returning to the lab once again they transferred all their findings to the Nimbus. They combined this with other information that they had extracted from a Hyperbook Pollution file and from the Key database on Antarctica to eventually produce quite a weighty document.

Wrapping up our Z88 in a polythene bag enabled another group of pupils to go walkabout in the local cemetery recording information from gravestones. This same well protected Z88 journeyed out to the local colliery pond once again recording information about plant and animals together with their location. On return to school the material was transferred to the network for processing.

We have also tried 'electronic homework'(now there's a catchy phrase for someone to use). At the moment we only have one Z88 for the pupils to use although 4 of our staff have their own Z88s. This has meant starting a loan scheme. Introducing pupils to the Z88 and giving them simple exercises to complete have made up the majority of loans.

These simple exercises have been cut and paste types where the pupil has been supplied with several sentences which are in jumbled order. The pupil's task has been to re-arrange the sentences to make a coherent paragraph. Other exercises have included close procedure type exercises. The pupils in these have been supplied with a block of text which has words missing (shown by a relative number of asterisks) and also has words which are jumbled up (shown by the word being in CAPITAL letters). Pupils must fill in the blanks and rearrange the letters to once again finish with a paragraph that makes sense. However this is not quite what I had in mind when I first thought of EH.

More in keeping with this ideal some pupils have borrowed machines to complete project work and assignments. Many pupils have their own computers but not many have printers or wordprocessing software so often their use of a computer for school work has been limited if indeed ever considered. With the Z88 we are attempting to overcome the problem by using it as a transport medium. We are encouraging pupils to buy a wordprocessor and we are looking at transfer software for several machines. Pupils can therefore produce their work at home and then bring it into school on the Z88 so that it can be printed out. Early trials have been quite promising with some pupils taking this a stage further. They have brought work in carried out further editing and then taken it home again. Several journeys have allowed them to produce a lengthy project in a short time.

I mentioned earlier that several staff have a Z88 of their own. Here they have been a great success and seem to be considered in exactly the same way as a stick of chalk - indispensable. Easy transfer of information is high on the list. My other colleagues use BBCs whereas I have a PC. Using the Z88 has meant that there has been no problems in transferring ideas, notes and worksheets. Collaboration on worksheets has meant that work has been done in several locations and brought together at one central point. Worksheets are now desktop published on the PC having started life in many quarters of the county. This has also been helped by producing our own leads for connecting two Z88s back to back.

We have also spent a great deal of time working on Records of Achievement. One colleague has used his Z88 extensively in this field turning out 180 reports in just a few days using software that we have developed ourselves. Necessity has also prompted us to devise programs for labels and class lists using as a starting point the Pipedream database. Other uses include using the diary option as a record book.



Z88 EPROM - May 1990

Program to remove Carriage Returns and Convert Pound Signs

10 CLS

20 INPUT"Name of Plain Text File ? "file\$

30 R%=OPENIN(file\$)

40 Z%=OPENOUT("TEXTFILE")

50 REPEAT

60 INPUT#R%,A\$

70 IFA\$="" A\$=A\$+CHR\$(13)+CHR\$(10)+CHR\$(10):GOTO 180

80 IF RIGHT\$(A\$,1)<>" " A\$=A\$+" "

90 FOR J=1 TO LENA\$

100 N=ASC(MID\$(A\$,J,1))

110 IFN=163 N=156

120 BPUT#Z%,N

130 NEXT

140 UNTIL EOF#R%

150 CLOSE#Z%:CLOSE#R%

160 END

Program to Convert Plain Text into dBase Append From format. Removes  
Tabs and Substitutes Commas

10 CLS

20 INPUT"Name of Plain Text File ? "file\$

30 R%=OPENIN(file\$)

40 Z%=OPENOUT(file\$+".dba"):REM For dBase Append From

50 REPEAT

60 N=BGET##R%

70 IF N=9 N=44

80 BPUT#Z%,N

90 NEXT

# TK

# COMPUTERWARE

the Z88stockist

Tel: 0303-81-2801

<b>RAM Packs:</b>	32k	£20.00
	128k	£50.00
	512k	£200.00
<b>EPROM Packs:</b>	32k	£20.00
	128k	£50.00
<b>COMPUTER:</b>	Z88	£230.00
<b>ADAPTERS:</b>	- Amstrad PCW (C-Port Software)	£30.00
	- Archimedes	£35.00
	- BBC	£25.00
	- Macintosh	£60.00
	- Mains	£10.00
	- PC 2	£35.00
	- QL (BT connector Ser 1)	£25.00
	- QL ('D' connector Ser 1)	£27.00
<b>SUNDRY:</b>	Cambridge Topper	£8.00
	Carry Case	£10.00
	Centronics Interface	£30.00
	Disc Drive 3.5" battery powered with Interface	£250.00
	EPROM Eraser	£40.00
	Modem (Cambridge)	£170.00
	Modem Cable	£12.00
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Z88 EPROM - May 1990

100 UNTIL EOF#R%

110 CLOSE#Z%:CLOSE#R%

120 END

Program to accept data for dBase Append From input

10 file%=OPENOUT("DATAFILE")

20 REPEAT

30 INPUT"What is data for Field 1 ? "field1\$

40 INPUT"What is data for Filed 2 ? "field2\$

50 INPUT"What is data for Field 3 ? "field3\$

55 data\$=field1\$+","field2\$+","field3\$

60 PRINT#file%,data\$

70 PRINT"Any more ?"

80 G\$=GET\$

90 IFG\$<>"N" GOTO 20

100 CLOSE#file%

110 END

120 UNTIL FALSE

Note these last two listings will probably work with FoxBase and Dataease but I have not tried them.

Jeff Moon is a science teacher at Castle View School in Sunderland.

**(Thanks for the most interesting article, Jeff. If anyone else has some thoughts about their uses for the Z88, be it in education, business or at home, I know that many people are interested in this sort of thing. We are especially interested if you use your Z88 for something unusual, or in unusual circumstances.**

**Please send any contributions to the usual Club Address - these can be on EPROM card, 5.25" (360k or 1.2M) or 3.5" (720k or 1.44M) MS-DOS floppy discs, or even paper! Because of the time it takes to retype anything sent on paper, I do much prefer to have articles on any of the other formats! - Roy)**

# USING THE CLI FROM BASIC - EPISODE TWO!

by Michael W. Hey (0703)

In the last issue of the magazine I explained how to run CLI routines from BASIC. (For those unfortunate enough to miss it I should explain that BBC BASIC on the Z88 contains two commands called OSCLI and \*CLI which allow your BASIC program to send instructions to other Z88 applications.)

This feature is not mentioned in the User Guide, so many users tragically remain unaware of its existence, let alone how it can revolutionise their lives.

To give you a taste of the potential of this facility here are two simple BASIC programs. They both arose out of requests at the All Formats Computer Fair, and are available from the Software Library, though you may find it just as easy to type them in.

## A LONG - AWAITED PROGRAM.

The first program is called "TAB.bas", and allows you to indent paragraphs in PipeDream in such a way that the following line starts flush with the left margin. People have been griping about the PipeDream TAB for years (e.g. Bruce Knox in the last issue of "Z88 Eprom", and Jerry Pournelle in "Byte") but no one has done anything about it except me.

My solution is to have a loop in BASIC which continually runs the CLI command #P plus a string of spaces. (The first part of the program lets you choose how many.) Thereafter every time a "TAB" is required you press [B and the BASIC program does the rest. This program will also insert TABs into lines which have already been written.

Remember that you should have only one "suspended" PipeDream in the Index or your TABs will go into the wrong one!

TAB.BAS

5 REM "TAB.bas" - written by M. W. Hey (0703).

10 message\$= "You should have only one instantiation of PipeDream in the Index, or the results of this program may be somewhat unpredictable!"

20 \*NAME PipeDream TAB

30 CLS: VDU1,ASC"R": PRINT SPC(31);"AUTO-TAB FOR PIPEDREAM"; SPC(33):VDU1,127: PRINT message\$'

40 VDU1,67,1,83: INPUT "Size of TAB? "space%

60 IF space% = 0 THEN space% = 12: PRINT "12"; : REM because twelve is the default PipeDream column size.

80 IF space% > 72 THEN message\$= "Are you sure? (That is wider than the display!)": GOTO 30

100 space\$ = "" : FOR I = 1 TO space%: space\$ = space\$+" " : NEXT I

110 PRINT space\$

120 REPEAT

140 OSCLI ("CLI #P"+space\$):dummy = INKEY(0)

160 UNTIL FALSE

Here the OSCLI command is used so that a string may follow CLI #P. This is to enable us to have a variable sized TAB.

YET ANOTHER USEFUL PROGRAM.

The second program prints multiple copies of PipeDream documents. I am often in the position of wanting to print several copies of the CLI library list, and up until now I had to print them out one at a time.

No longer! I can now select the number I need and the program takes care of the rest. To allow for typing errors, if the number requested is less than one the program assumes that you did actually want to print something so it prints a single copy. If you request more than twenty five copies it asks the user for confirmation before industriously printing dozens of unwanted copies. (You can change the figure of 25 to some other number if you prefer.)

Once again only one instantiation of PipeDream is permitted. I forgot to check this once and I have a large pile of unwanted print-outs as a result. If your printer runs out of paper while printing, normally reloading the printer and switching it back on-line causes no loss of data - the printer just carries on from where it stopped.

MULTI-PRINT.BAS

10 message\$= "You MUST have only ONE instantiation of PipeDream in the Index, otherwise this programme will cycle through them printing copies of each!"

20 \*NAME Multi-print

30 CLS: VDU1,ASC"R": PRINT SPC(30);"MULTI-PRINT FOR PIPEDREAM"; SPC(30):VDU1,127: PRINT message\$

40 VDU1,67,1,83: INPUT "Number of copies? "quantity%

60 IF quantity% = 0 THEN quantity% = 1: PRINT "1";

80 IF quantity% > 25 THEN INPUT "Are you sure? "answer\$: IF LEFT\$(answer\$,1)<>"Y" THEN GOTO 30

100 FOR I% = 1 TO quantity%

120 OSCLI ("CLI #P|PO`E#B"): dummy = INKEY(0)

140 NEXT I%

150 END: REM This program was written by Michael W. Hey. Grateful Z88 users should feel free to express their appreciation by sending bank-notes to me at 18, Woodside Road, Sandiacre, Nottingham. NG10 5GP

How does one stop these programs running? (I hear you ask.) Well, either by nipping to the Index and "Kill"ing them or by pressing [JB and escape - very quickly (within a tenth of a second).

For those of you not wishing to type in the listings they are available from Ian Braby at the software library (nos. Z116 and Z117), or from me (X014 and X015, address as above).

OOPS....

Last month's article stirred up a certain amount of discontent. One gentleman was concerned because he could not get \*CLI to work. I should point out that in a command such as \*CLI #P there is a space between the I and the #. It was not made 100% clear, and the command will not work without that space. This applies to this months programs too.

I have received a letter from Richard Russell in which he pointed out that I had incorrectly stated that quotes and commas cannot both be placed in DATA statements; the remedy is to use pairs of quotes (like this ""). The date facility in last month's program can then be placed in the DATA statement on line 6 thus:-

```
6 DATA "Print Today's date", "|[x=OPENOUT """:RAM.0/now.tmp""~E
PRINT##x, LEFT$(TIME$, LEN(TIME$)-10):CLOSE##x~ERUN~E
#P|FL:RAM.0/now.tmp~Dy~D~Dy~E"
```

This should be typed into funkey.bas as one long line.

I realise that now I have confessed to these mistakes everybody will be scouring my latest words of wisdom looking for errors. I have checked this article very carefully, so you will not find any.

Next month I shall explain in more detail another feature that the User Guide skated over.

#### RECKLESS OR WHAT?

Finally, I have rashly promised several people that I will write a Guide to Using the CLI, which Roy Woodward has agreed to publish. One or two members have already told me what they would particularly like to see in it. I would greatly value further requests or suggestions (on the naive assumption that the more carefully it is tailored to people's needs the more people will buy it). My address appears in the multi-print listing (above).

I shall really stick my neck out and promise to try and get it done in time for Christmas (but I shall not specify which year).

## Book Review - Z88 Software Developers' Notes - Cambridge Computer Ltd.

By Steve Marsh (0770)

The Developers' Notes have proved to be an invaluable source of information about the inner workings of the Z88. It is not, however, a book for those of you who switch off at the mention of Z80 machine code!

The book is well laid out and, as far as I can ascertain, accurate. It is split into several sections, each one covering one particular aspect of the Z88's



operation, although they are not really connected in any way. As the book is intended mainly as a reference manual, I see this as a plus point.

Most importantly, the book is not yet another re-hash of the Z88 manual that comes with the Z88. If this book left you cold, then don't bother to look at the developers' notes. If, on the other hand, it left you thinking "but how does it work?", then this is the book for you!

The book is to be aimed at enabling software houses to write applications for the Z88. This is borne out by the order of the information in the notes - The first 26 pages being on how to write applications.

This is followed by the main reference section. The book goes into detail about the operating system (OZ) and explains how to use OZ calls to do all manner of wonderful things, including:

Use of windows, and graphics characters. How to read the keyboard. How to use the printer filter. Use of the filing system and linked lists. Memory paging and management. Error Handling. Integer Arithmetic and the Floating Point package. Wildcard handling for files. How Z88 applications are linked together using DORs

DORs (Directory Object Records) are used to link together data on the Z88. They are fundamental to the operation of the Z88 and can be used for applications, popdowns, help screens and files.

Example Z80 programs are given at frequent intervals to allow you to see how these work. These could be used in BASIC programs and included in your own programs.

The overview of the Hardware is quite detailed, giving information on the BLINK chip which controls many of the Z88's functions, Bank switching, the Keyboard, EPROMs, the screen, the clock and Z88 machine states.

The Z88 has three states:

1. Active - the screen is displayed.
2. Snooze - the screen is off, the Z80 clock is stopped, but various system clocks continue to run.
3. Coma - this is the state the Z88 is in when it is turned off. In a coma the Z88 uses only the minimum amount of power.

There is then a short section on BBC BASIC (Z80), concentrating mainly on the use of the built in assembler. However, it leaves much of the explanation to M-TEC's Basic manual. This was written by Richard Russell who wrote the BASIC, and so must be the last word!

Next is a comprehensive index to OZ calls and system manifests.

Cambridge Computer supply a developers package for the PC which use these. It includes a cross-assembler, macros, system manifests, example applications, EPROM and a RAM which operates as a ROM to speed up software development. I understand that it uses a reed switch to enable the RAM to be written to by using a magnet to close the reed switch, but disconnects the write lines when the magnet is removed. This leaves the RAM intact after a crash. The package is expected to cost £250-300 when it is released.

There are then 5 Appendices and an index covering hardware, Eproms, Z80 opcodes, Z88 character set, miscellaneous bits 'n pieces and a glossary.


I originally wrote this review based on my own developers' notes which I have had for some time now (v.093). Roy sent me a copy of the current manual (v2.0) to review instead. The two manuals have a lot in common, the main differences being:

The new manual is neater and better laid out. It contains more detail on the Hardware. However, the early version of the manual was written (presumably) before the PC based development package was conceived. I say this because the earlier manual gave example Z80 programs using the BASIC assembler whereas the new manual only gives the Z80 code itself.

There is one major omission from the new manual which was formerly included - the example application. It is a very good example of how to write your own applications, including a full listing which allows you to blow your own ROM onto an empty EPROM providing a Filer-like Eprom utility, help for ImpExp and an application called "useless" (and it is!).

The example was designed to show most of the techniques needed to write an application and it does this well (though it did cause a little brain-ache). As an example of its use, I have modified the Eprom Filer to make it easier to use and added this, together with PCLINK II to Wordmongers' Superchip2 (there is loads of free space on that 128K Eprom). That means that all my commonly used Applications are now on one ROM, saving wear and tear on the slot connectors.

To summarize - the Z88 Developers' notes are the answer to a techie's dream. It will take all the mystery and guesswork out of writing Z88 programs, though if you do start to write them make sure that you have adequate backups; It is the easiest thing in the world to crash the Z88 along with all your data and source code....



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## Comms Corner

by Mark Ambrose (1483)

I had this friend, who always claimed that his modem was the sole reason he owned his computer, oh boy! I thought he was just so weird! A couple of years (of brainwashing) later I finally got round to getting hold of one for my aging PC. Suddenly a whole new world opened to me. Like Simon Phipps I found my main source of reference was the Personal Computer World magazine End Zone, with its seemingly endless list of UK Bulletin boards. Using these published numbers I could access so many others.

Although I use an Amstrad MC2400 modem card for my PC, the principle is the same for the modems that are available for the Z88. My modem slots into a IBM PC , supporting speeds upto 2400 baud. It comes complete with Mirror II software which provides a complete interface to the Hayes compatible modem. The modem description Hayes only denotes the command standard required to drive the modem; the same way that "IBM" is used to PC compatibility, or "BBC" to BASIC. The great thing about the Mirror II software is that you can store and easily recover settings for all the boards that you call, ie. their telephone numbers, baud rates etc. I use several bulletin boards (or to use the jargon BBS) in the UK where I can leave mail for friends, discuss problems and ideas with strangers, or just download software.

We latex computer users are very lucky; because there isn't a virus problem with the Z88 (as most software is capable of crashing it without a forethought anyway!) On the market today there are several PC games which allow you to experience one-to-one combat, using the modem and a friend! The Falcon AT jet fighter game, or the 688 attack submarine game allowing a modem connection to a remote computer thus permitting distant combat.

Its funny that some people prefer this form of combat to 'playing the computer' because another human is, well, only human! and so prone to mistakes. (Also you can meet in the local at the weekend and poke them about their hopefully unsuccessful tactics over a beer). Such software is not beyond the scope of the Z88.

There is also a different sort of sport spreading across the USA involving playing against several opponents at the same time; but these sort of games require a system to allow several users online simultaneously.

However most of the systems in use in the UK are with a single machine and a phone line; seriously limiting these games this side of the Atlantic.

I think I have only experienced the same feeling that I have with my modem when I used my first printer, (or was it when I first copied a mate's compatible games disk). I was only opening up a route to the outside world. If we consider that computer sitting on your desk/lap is only an island, and although a printer, disk or eprom provide you with an occasional row-boat; a modem will be a six lane motorway suspension bridge.

So go for it, you'll only regret not doing it earlier, and unlike computers the technology is pretty static, even the 300 baud modems from the 60s still work!

## LIBRARY UPDATE

May I start this month with a few pleas; my apologies to those for whom this sounds like a broken record!

PLEASE:

If you want your disk, EPROM or Library Listing returned to you remember to enclose:

1. sufficient return postage and, please, **DO NOT** stick them to anything!
2. a stamped, addressed envelope\* or Jiffy bag (\*for a Listing this should be a minimum 6.5" x 9.5") - labels are only suitable for re-usable Jiffy bags.
3. the appropriate fee for a List or EPROM erasure: 50p
4. when sending disks, particularly un-formatted 3.5" ones, please let me know what format they are to be (PC,ST or QL!)

Thank you!

Before this month's haul of programs I'd like to announce that I've received v1.5 of Steve Marsh's excellent **PCLinkIII**. Also, I have discovered that I have introduced an error into Z081. Line 20 of STRING.BAS is missing a " in the OPENIN statement. It should be:

```
:X%=OPENIN("Z081/CONTACTS.STR"):
```

Failure to change this will cause the program to stop with an error message.

## Z88 EPROM - May 1990

Now, for this edition's updates which include the first alternative programming language, function keys for PipeDream and much, much more!

Z107            zBack by Simon Phipps (0221) - his version of Steve Marsh's PCLink III with his own, distinctive flavour! (Only available on 360k or 720k PC disk.)

Z108            FUNCTION KEYS (6k) by Michael Hey (0703) - adds  
function keys to PipeDream  
A=documentation  
B=BASIC program  
C=CLI file

Z109            FORTH (44.5k) by Salvador Merino (2268) - a fully working  
Forth interpreter which runs under BASIC.  
A-C=documentation  
D=BASIC loader  
E=machine code

### **Z110-113 Four programs from Dennis Groning (1080)**

Z110            Z88-IMPEXP (19k) for the Spectrum - although this is only  
available as a Z88 binary file to download into your Spectrum!  
A=documentation  
B=program

Z111            COPYFILE (1k) - copies files from device to device!

Z112            LABEL PRINTER (15.5k) - a PipeDream formula for label  
printing.  
A=documentation  
B=PipeDream formula  
C-D=example files

Z113            XEROX 4045 Laser Printer Driver (8.5k)  
A=documentation  
B=portrait driver  
C=landscape driver  
D=label driver



Z114 CAPS.BAS by Michael Hey (0703) - a BASIC program which will convert small letters into capitals in any text file (including PipeDream)  
A=documentation  
B=program

Z115 POTTERS' SUITE (19k) by Jerry Fryman (0810). A suite of 3 PipeDream spreadsheets. The first (A=documentation; B=Spreadsheet) will calculate the ingredients of a ceramic glaze and show the percentage of the oxides present. The second (C) calculates the amount of dry material in a litre of slop. The third (D) will calculate percentage recipes produced from a line blend of two different glazes.

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